assembly **150**, that in the exemplary embodiment, is a thrust bearing that is positioned between drive shaft **31** and gearbox **100** to facilitate transmitting the residual thrust load generated by fan assembly **12**, booster rotor **50**, and low-pressure turbine **20** to ground, via gearbox housing **101**. This arrangement includes only two thrust bearings utilized to balance the thrust loads generated by the fan assembly **12**, low-pressure turbine **20**, and booster compressor **22**, and thus provides for a less complex counter-rotating booster compressor that is easier to fabricate, utilizes fewer bearing assemblies, and thus reduces life cycle maintenance costs.

[0029] FIG. **7** is an enlarged cross-sectional view of another booster compressor arrangement that may be utilized with turbofan engine assembly **10** shown in FIG. **1**. In this arrangement, counter-rotating booster compressor **22** also includes first rotor section or spool **50** that, in the exemplary embodiment, includes two stages **52**, and second rotor section or spool **60** that, in the exemplary embodiment, includes three stages **62**. In this arrangement, first rotor section **50** is coupled to fan assembly **12** using cone **122**, and fan assembly **12** is coupled to shaft **31** using extension shaft **202**, and second rotor section **60** is coupled to first gearbox output **111** utilizing a cone **300**. Moreover, turbofan engine assembly **10** includes a plurality of stationary inlet guide vanes **70** and a plurality of stationary outlet guide vanes **72** that are coupled to frame **15**.

[0030] More specifically, in this embodiment, turbofan engine assembly **10** includes a first bearing assembly **302** that is disposed between cone **300** and extension shaft **202**, and a second bearing assembly **304** that is disposed between shaft **31** and frame **15**. In the exemplary embodiment, bearing assemblies **302** and **304** are each thrust bearings that facilitate balancing the thrust loads generated by fan assembly **12**, booster **22**, and low-pressure turbine **20**, and transmitting the residual thrust load to ground. Turbofan engine assembly **10** also includes a bearing assembly **306** and a bearing assembly **308** that each facilitate providing rotational support to second rotor section **60**. Accordingly, bearing assemblies **306** and **308** facilitate maintaining second rotor assembly **60** in a relatively fixed radial position with respect to first rotor section **50**. In this embodiment, shaft **31**, and thus low-pressure turbine **20**, is coupled to gearbox input **110** to drive gearbox **100**. Moreover, shaft **31** is coupled directly to fan assembly **12** and first rotor section **50**. As a result, gearbox **100** includes a single output, i.e. first output **111** that is utilized to drive second rotor section **60** via cone **300**.

[0031] FIG. **8** is an enlarged cross-sectional view of another booster compressor arrangement that may be utilized with turbofan engine assembly **10** shown in FIG. **1**. This arrangement is substantially similar to the arrangement illustrated in FIG. **7**. However, in this arrangement, counter-rotating booster compressor **22** includes first rotor section or spool **50** that, in the exemplary embodiment, includes two stages **52**, and second rotor section or spool **60** that, in the exemplary embodiment, includes three stages **62**. In this arrangement, first rotor section **50** is coupled gearbox **100** using cone **300**. Moreover, second rotor section **60** is coupled to fan assembly **12** using cone **122**, and fan assembly **12** is coupled to shaft **31** using extension shaft **202**, and second rotor section **60** is coupled to first gearbox output **111** utilizing a cone **300**. As such, gearbox **100** is utilized to drive the radially inner portion of booster compressor **22**, i.e. first rotor section **50**, and the low-pressure turbine **20** is utilized to drive fan assembly **12** and the radially outer portion of booster compressor **22**, i.e. second rotor section **60**.

[0032] FIG. **9** is a simplified schematic illustration of another exemplary booster compressor arrangement that may be utilized with turbofan engine assembly **10** shown in FIG. **1**. In this arrangement, counter-rotating booster compressor **22** includes first rotor section or spool **50** that, in the exemplary embodiment, includes two stages **52**, and second rotor section or spool **60** that, in the exemplary embodiment, includes two stages **62** that are interdigitated with stages **52**. In this arrangement, first rotor section **50** is coupled to fan assembly **12** using cone **122** and fan assembly **12** is coupled to shaft **31** using extension shaft **202**. Moreover second rotor section **60** is coupled to gearbox **100** using cone **300**. As such, gearbox **100** is utilized to drive the radially outer portion, i.e. second rotor section **60**, of booster compressor **22**, and the low-pressure turbine **20** is utilized to drive fan assembly **12** and the radially inner portion of booster compressor **22**, i.e. first rotor section **50**. As shown, inlet guide vanes **70** and outlet guide vanes **72** are stationary guide vanes that are coupled to frame **15**. Moreover, in this embodiment, a first stage **400** of first rotor section **50** is disposed upstream from a first stage **402** of second rotor section **60**.

[0033] FIG. **10** is a simplified schematic illustration of another exemplary booster compressor arrangement that may be utilized with turbofan engine assembly **10** shown in FIG. **1**. In this arrangement, counter-rotating booster compressor **22** includes first rotor section or spool **50** that, in the exemplary embodiment, includes two stages **52**, and second rotor section or spool **60** that, in the exemplary embodiment, includes three stages **62** that are interdigitated with stages **52**. In this arrangement, first rotor section **50** is coupled to fan assembly **12** using cone **122** and fan assembly **12** is coupled to shaft **31** using extension shaft **202**. Moreover, second rotor section **60** is coupled to gearbox **100** using cone **300**. As such, gearbox **100** is utilized to drive the radially outer portion, i.e. second rotor section **60**, of booster compressor **22**, and the low-pressure turbine **20** is utilized to drive fan assembly **12** and the radially inner portion of booster compressor **22**, i.e. first rotor section **50**. Moreover, in this embodiment, the first stage **500** of second rotor section **60** is disposed upstream from a first stage **502** of first rotor section **50**. Additionally, in this embodiment, first stage **500** is rotatable and function as the inlet guide vanes, whereas outlet guide vanes **72** remain coupled to frame **15**, and as such, remain stationary.

[0034] FIG. **11** is a simplified schematic illustration of another exemplary booster compressor arrangement that may be utilized with turbofan engine assembly **10** shown in FIG. **1**. In this arrangement, counter-rotating booster compressor **22** includes first rotor section or spool **50** that, in the exemplary embodiment, includes two stages **52**, and second rotor section or spool **60** that, in the exemplary embodiment, includes two stages **62** that are interdigitated with stages **52**. In this arrangement, second rotor section **60** is coupled to fan assembly **12** using cone **122** and fan assembly **12** is coupled to shaft **31** using extension shaft **202**. Moreover first rotor section **50** is coupled to gearbox **100** using cone **300**. As such, gearbox **100** is utilized to drive the radially inner portion, i.e. first rotor section **50**, of booster compressor **22**, and the low-pressure turbine **20** is utilized to drive fan assembly **12** and the radially outer portion of booster compressor **22**, i.e. second rotor section **60**. As shown, inlet